Chapter Four: Environmental Review

1.0 General

The purpose of this chapter is to: 1) identify development proposals that require further environmental action; 2) review existing environmental conditions; and 3) identify environmental impacts associated with the proposed facility development recommendations made in the preceding chapter, *Chapter 3 - Facility Requirements and Alternative Development.*

1.1 Governmental Policy

The National Environmental Policy Act of 1969 (NEPA) was the first act designed to raise environmental awareness of a number of industry practices. It required affected industries, including airports, to fully consider the impacts a project would have on the environment before capital improvement projects are funded. It also required coordination with Federal agencies before the issuance of any permits, and it required public involvement in the planning and environmental review process.[i]

According to NEPA, any project funded by the Federal government that affects the quality of the environment requires Federal action or environmental processing. Environmental processing falls into three categories depending on the particulars of the proposed project as outlined in the Federal Aviation Administration (FAA) *Order 5050.4A, Airport Environmental Handbook* (and subsequent revisions).[ii] They include: 1) actions requiring an environmental impact statement (EIS); 2) actions requiring an environmental assessment (EA); and 3) actions which are categorically excluded.

As defined in the FAA's *Advisory Circular (AC) 150/5070-6A, Airport Master Plans*, "…actions categorically excluded are actions which have been found, in normal circumstances, to have no potential [individually or cumulatively] for significant environmental impact." Actions requiring an environmental assessment may or may not have significant environmental impacts but due to the unknown, further analysis is required. And lastly, actions with known significant impacts require an environmental impact statement. [iii]

Table 4-1 identifies the level of environmental processing, if any, required for the projects recommended within this airport master plan update.

Table 4-1: Proposed Development - Requirement of Further Environmental Processing

Airport Development Proposals/Airport Improvements	Actions Requiring An Environmental Impact Statement [2]	Actions Requiring an Environmental Assessment	Actions That Are Categorically Excluded
Rehabilitate based aircraft storage ramp	No	No	Yes [1]
Rehabilitate itinerant aircraft storage ramp	No	No	Yes [1]
Construct based aircraft storage hangars and rehabilitate or replace hangars 1, 2, and 3	Possibly (see note 2)	Possibly [3]	No
Expand itinerant aircraft storage ramp with concrete paving material to accommodate larger jet aircraft such as the occasional use by Boeing 727's	Possibly (see note 2)	Possibly [3]	No
Expand and redesign the existing automobile parking lot and entrance roadway located in front of the terminal building creating access from both Airport Road and Regional Drive	Possibly (see note 2)	Possibly [4]	Yes [1 & 4]
Create a turf parking lot for overflow automobile rental and fan parking	Possibly (see note 2)	Possibly [3]	No
Demolish and construct a new 9,000 square foot terminal facility in the location of the existing facility	No	No	Yes [1]
Install an additional 18,000 gallon Jet-A fuel tank during rehabilitation of the based or itinerant aircraft ramps	Possibly (see note 2)	Yes [5]	No
Rehabilitate Runway 17-35 and remove 25-foot shoulders (estimated date for rehabilitation – 2010)	No	No	Yes [1]
Determine ultimate Runway visibility minimums for Runway 35	No	No	Yes [1]
Extend Runway 17-35 by 1,000 feet on the 35 end and relocate the approach light system (the MALSR) and the glide slope antenna. Extend the parallel taxiway to meet the new runway end.	Possibly (see note 2)	Yes [6]	No [6]
Rehabilitate Runway 12-30	No	No	Yes [1]
Provide better marking, signage, lighting and overall maintenance at the intersections of Runway 17 and 12	No	No	Yes [1]
Acquire property or obtain easements within the RPZ for Runway 12, 17 and ultimately 35	Possibly (see note 2)	Possibly [7]	Yes [1 & 7]
Fill and re-seed the terrain within the runway shoulders, runway blast pads and runway safety areas of both runways	No	No	Yes [1]
Remove the small trees growing within the RSA, OFA and OFZ of both runways	No	No	Yes [1]
Fill and re-grade the terrain surrounding airfield sign bases and light bases	No	No	Yes [1]
Update mowing schedule within the RSA, OFA and OFZ for both runways	No	No	Yes [1 & 8]

Table 4-1 Continued

Airport Development Proposals/Airport Improvements	Actions Requiring An Environmental Impact Statement [2]	Actions Requiring an Environmental Assessment	Actions That Are Categorically Excluded
Rehabilitate Taxiway A (south section) and its four stub taxiways (estimated date for rehabilitation – 2005/2006). Rehabilitate Taxiway A, the north section (estimated date for rehabilitation – 2010)	No	No	Yes [1]
Fill and reseed the taxiway safety area to reestablish a more appropriately graded and suitable surface.	No	No	Yes [1]
Construct a full-length parallel taxiway to Runway 12-30 and install medium intensity taxiway lights (MITLs)	No	No	Yes [1]
Realign the stub taxiway, Taxiway A1	No	No	Yes [1]
Convert the closed runway, Runway 03-21, into a taxiway/ramp and rehabilitate the pavement	No	No	Yes [1]
Repaint runway, taxiway and ramp markings every three years.	No	No	Yes [1]
Paint an aiming point marker on Runway 17 to meet paint marking standards for the non-precision runway	No	No	Yes [1]
Paint side stripes at the intersection of Runway 12-30 and the old runway until this area is converted into a taxiway/ramp, which at such a time, runway hold markings should be painted	No	No	Yes [1]
Paint an ILS hold position marking on Taxiway A	No	No	Yes [1]
Repaint the VOR checkpoint/compass rose	No	No	Yes [1]
Remove all markings on the closed runway with the exception of the yellow "X" demoting that the runway is closed	No	No	Yes [1]
Use glass beads in yellow and white paint markings as indicated in *AC 150/5340-1J, Standards for Airport Marking*	No	No	Yes [1]
Install MITLs for Taxiway A, its four access taxiways and the proposed parallel taxiway to Runway 12-30	No	No	Yes [1]
Install taxiway centerline lighting or low cost retroreflective centerline markers at Taxiway A1	No	No	Yes [1]
Install supplemental windsocks at the approach ends of Runway 30 and 35.	No	No	Yes [1]
Reestablish the REILS for Runway 17 and install REILS at the approach end of Runway 12	No	No	Yes [1]
Replace Runway 35's VASI with the newer and more advanced PAPI system.	No	No	Yes [1]
Replace existing airport signs and install new as necessary per the established sign plan	No	No	Yes [1]

Table 4-1 Continued

Airport Development Proposals/Airport Improvements	Actions Requiring An Environmental Impact Statement [2]	Actions Requiring an Environmental Assessment	Actions That Are Categorically Excluded
Remove airport obstructions	No	No	Yes [1]
Install airport security/wildlife fencing	No	No	Yes [1]
Install a turf perimeter road	No	No	Yes [1]
Complete an SPCC Plan	N/A	N/A	N/A
Replace the 1965 Tractioneer snow blower with a new modern piece of equipment	No	No	Yes [1]

Notes:

1. As indicated in the *Airport Environmental Handbook*, *Order 5050.4A*, *Chapter 3*, *Environmental Action Choices*, *Paragraph 23*, *Categorical Exclusions*,[iv] the proposed development listed is categorically excluded and typically does not require an EA. However, according to *Environmental Impacts: Policies and Procedures*, *Order 5050.1E*,[v] " An action on the categorically excluded list is not automatically exempted from environmental review under NEPA. The responsible FAA official must determine if extraordinary circumstances exist (see text following this table) before deciding to categorically exclude a proposed action."
2. According to the *Airport Environmental Handbook*, *Order 5050.4A*, and based on the results of an EA, two action choices follow the completion of an EA. They are as follows: 1) the completion of an EIS, or 2) findings of no significant impact. If the EA identifies significant impacts associated with any of the airport development proposals, further environmental processing is required and an EIS must be completed. If significant impacts **were not** identified within the EA, a statement identifying a finding of no significant impact must be completed indicating that further environmental action is not required[vi]
3. Although not categorically excluded, the proposed development is intended to take place within designated development zones. According to the Conservation Management Agreement (see *Section 9.0 – Conservation Management Agreement*, of this chapter for further information), the development zones were created to allow for future airport development, while the conservation zones were created to allow for the protection of the Karner Blue Butterfly and its habitant (State and Federally listed endangered species). According to discussions with an FAA staff member,[vii] the airport should be allowed to develop within the designated development zones without completing an EA. However, he did caution that other impacts might exist that trigger the need for an EA. Therefore, prior to development, preliminary site surveys must be conducted to identify any potential impacts that affect the quality of the environment
4. Both automobile projects involve the construction of new parking lots and service roads to access the lots from both Airport Road and Regional Drive. Typically construction, relocation or repair of entrance and service roads is categorically excluded. However, if the installation adversely affects the capacity of public roadways, an EA is required. Traffic congestion that already exists along Airport Road may require an EA to determine the extent of capacity impacts.
5. According to *Environmental Impacts: Policies and Procedures*, *Order 5050.1E*, *Paragraph 310u*,[viii] " Repair or replacement of underground storage tanks (UST's) and aboveground storage tanks (AST's), or replacement of UST's with AST's at the same location" are categorically excluded. However, the installation of **new** tanks is not mentioned in the *Airport Environmental Handbook*, *Order 5050.4A*. Therefore, discussions with the responsible FAA official are required before installation to ensure compliance with NEPA regulations.
6. An EA is required for the establishment or relocation of an instrument landing system (ILS), which is proposed here. Typically runway extensions and taxiway construction are categorically excluded. However, major runway extensions, which results in a 1.5 decibel or greater increase in noise over any noise sensitive area located within the 65 DNL contour require an EA (see *Section 3.0 – Aircraft Noise and Compatible Land Use* of this chapter for further information).
7. The acquisition of the property located within the RPZ is to allow for airport control over the area so that it can be maintained and obstructions to air navigation removed. Typically the acquisition of property is categorically excluded for grading or obstruction removal and erosion control on off airport properties where no impacts exist. However, if the land in question has impacts that affect the quality of the environment, than an EA is required.
8. The routine mowing of grass within the RSA, OFA and OFZ at Concord Municipal Airport is in conflict with the Conservation Management Agreement, which is in place to protect endangered and/or threatened species, such as the Karner Blue Butterfly. Mowing of the grass impacts the habitat that the Karner Blue Butterfly thrives on. Discussions with an FAA staff member [vii] indicate that an EA is not necessary. However, coordination with the U.S. Fish and Wildlife Service and the New Hampshire Fish and Game is required when planning the airports mowing schedule.

The table above identifies projects that are categorically excluded as well as projects requiring further environmental action. Categorically excluded projects are typically exempt from further environmental review. However, *FAA Order 5050.1E, Environmental Impacts: Policies and Procedures*,[v] states that, "Some actions that would normally be categorically excluded could require additional environmental analysis to determine the appropriate NEPA documentation. A determination of whether a proposed action, that is normally categorically excluded, requires an EA or EIS depends on whether the proposed action involves extraordinary circumstances." Although not a complete list (see *FAA Order 5050.1E, Environmental Impacts: Policies and Procedures, Chapter 3, Paragraph 304* for a full list), the following identifies some of the extraordinary circumstances that would require the completion of an EA or EIS for normally categorically excluded projects:

- An action that has an adverse effect on cultural resources protected under the National Historic Preservation Act of 1966, as amended;
- An action that has an impact on natural, ecological (e.g., invasive species), or scenic resources of Federal, Tribal, State, or local significance (for example: Federally listed or proposed endangered, threatened, or candidate species or designated or proposed critical habitat under the Endangered Species Act), resources protected by the Fish and Wildlife Coordination Act; wetlands; floodplains; prime, unique, State or locally important farmlands; energy supply and natural resources; and wild and scenic rivers, including study or eligible river segments and solid waste management;
- An action that causes a division or disruption of an established community, or a disruption of orderly, planned development, or an inconsistency with plans or goals that have been adopted by the community in which the project is located;
- An action that causes an increase in congestion from surface transportation;
- An action that has an impact on noise levels of noise-sensitive areas

Due to the potential extraordinary circumstances that would require the completion of an EA or EIS for what would normally be categorically excluded projects and the FAA's request to identify all proposed projects and their potential cumulative impacts in one study, it is recommended that an EA be completed to include a review of all projects proposed within this airport master plan update. This will provide the responsible FAA official with the data necessary to determine what further environmental actions are required. Since the typical shelf life of an EA is three years, updates to that study will be required if there have been changes since completion of the original EA.

2.0 Environmental Conditions

The purpose of this section is to briefly review the airport's existing environmental conditions and identify potential environmental impacts associated with the proposed facility development recommendations. This section, although much more abbreviated than an EA, touches upon those items, which will be included in an environmental assessment at Concord Municipal Airport and include the:

- Aircraft noise and compatible land use;
- Social impacts;
- Air quality;
- Water quality and wetlands;
- Historic, archaeological, architectural, and cultural resources;
- Federally and State listed endangered species; and
- The Conservation Management Agreement

2.1 The Airport's Environmental Setting

The previous master plan for Concord Municipal Airport (the *March 1996 Concord Municipal Airport Master Plan Update*[ix]) identified the airport's environmental setting as follows:

> The Concord Municipal Airport is located in an area known as the Concord Heights, which can be topographically described as a plateau, which sits some 60 to 75 feet above the Merrimack and Soucook Rivers and their tributaries. The Airport is located in the Concord Pine Barrens, which is a 500-acre area characterized by pitch pine woodlands, scrub oak thickets and grass and heath (low growing shrubs) openings. This area is significant in that it is a rare community that once was in excess of 4,500 acres in size, but through development has been reduced by almost 90 percent in the last 100 years.

Although airport development has taken place since the completion of the 1996 master plan (see Table 1-4, *Chapter 1 – Inventory*), the City of Concord, the New Hampshire Department of Transportation (NHDOT), the United States Fish and Wildlife Service, the New Hampshire Fish and Game Department and the New Hampshire Army National Guard are aware of the airport's environmental setting and rare community and have identified conservation areas and development alternatives in an effort to protect the airport's natural resources.

The data collected to complete the following sections is derived from review of *FAA Order 5050.4A, Airport Environmental Handbook;* discussions with the FAA, the United States Department of the Interior - Fish and Wildlife Services; the New Hampshire Fish and Game Department; the New Hampshire Division of Historical Resources; airport tenants and users; and from previous reports and studies.

3.0 Aircraft Noise and Compatible Land Use

Noise from aircraft is one of the most controversial issues facing airports today. Aircraft noise is one of the most prominent indicators to the public that there is an airport operating locally. Even at general aviation airports such as Concord Municipal Airport, noise complaints are commonly the most prevalent commentary regarding airports from the general public.

Potential noise impacts at Concord Municipal Airport are evaluated using the latest version of the FAA's Integrated Noise Model (INM)[x]. Using runway geometry, forecast operations, typical flight tracks and aircraft types the program creates noise contours representing areas of noise impact around the airport. The noise contours are created using annual day-night average sound levels (DNL) for Concord Municipal Airport. The DNL represents average daily noise levels that occur over a 24-hour period, with a 10-decibel penalty added to the noise levels of aircraft operating between the hours of 10:00 pm and 7:00 am (the penalty is based on the premise that there is a greater sensitivity to noise events occurring at night, when it is generally quieter and most residents are either sleeping or relaxing). The contours identify which areas are likely to have noise concerns. Generally, those areas falling within the 65 DNL contour are considered to be subject to noise disturbance.

Federal Aviation Regulation (FAR) Part 150, *Airport Noise Compatibility Planning*,[xi] contains Federal standards on determining land use compatibility for given airport noise levels measured in terms of DNL thresholds. All land uses, which include: residential, public use, commercial use, manufacturing and production, and recreational, are deemed compatible with levels less than 65 DNL. Other land uses, such as industrial and commercial, are compatible with somewhat higher DNL levels. Using the 65 DNL contour allows the identification of noise sensitive communities within all compatible land uses. Therefore, this metric is used as the principal measure of noise impact for Concord Municipal Airport.

Chapter 5 – Airport Plans, Drawing 10 of 11, Land Use Plan/Area Zoning/Existing and Future Noise Contours, identify the existing 2004 and future 2023 65 DNL noise contours, for Runways 17-35 and 12-30. As indicated in the drawing, both the existing and future 65 DNL noise contours extend beyond airport property boundaries and into lands considered incompatible within the 65 DNL noise contour. The impact by land use type is outlined in **Table 4-2.**

Table 4-2: 65 DNL Noise Impact (2004 and 2023)

Land Use Impacted	2004 Acres Impacted	2023 Acres Impacted
Industrial District (IN)	11	11
Single Family Residential (RS) - Incompatible	0	3
Office Park Performance District (OFP)	8	9
Institutional District (IS) - Incompatible	2	13
Shoreland Protection (SP) District	0	2
Total Acres Impacted	**21**	**38**
Total Compatible Land Use [1]	**19**	**22**
Total Incompatible Land Use [2]	**2**	**16**

Source:
Concord Zoning ordinance[xii].
Notes:
1. Compatible land uses within the 65 DNL noise contour include the following: Industrial District (IN), Office Park Performance District (OFP) General Commercial District (CG) and Shoreland Protection (SP) District. Although the Institutional District (IS) includes land used for government services, which are considered compatible with noise levels above 65 DNL, the IS also accommodates educational, healthcare, and cultural facilities together with medical and professional offices and high density residential uses, which are not compatible and are therefore, included in the incompatible land use category.
2. Incompatible land uses within the 65 DNL noise contour include the following: Open Space Residential District (RO), Single Family Residential (RS) and Institutional District (IS).

As indicated in the table above, the future (2023) 65 DNL noise contour will impact approximately 14-acres of incompatible land as compared to 2-acres for the existing (2004) 65 DNL noise contour. **Because of the anticipated increase in the area of incompatible land use, noise will be a significant part of the EA for the airport development, especially the runway extension.**

Recommendations for dealing with the incompatible land uses around Concord Municipal Airport are described, below.

Two acres of Open Space Residential District (RO) will be impacted by the future 65 DNL contour. According to the City's zoning ordinance, RO land can accommodate single-family dwellings as well as cluster developments (incompatible uses), agricultural, forestry, and low-impact outdoor recreational uses (compatible uses). Currently, none of the incompatible land uses have occurred on the 2-acres. **Therefore, we recommended the City of Concord take appropriate action to reduce the probability of future incompatible development within this area of potential impact.**

The airport is surrounded on both the north and west boundary by highly developed Single Family Residential (RS) land. Although only a small amount of future impact is projected (1-acre), any additional residential development has the potential to present future land use conflicts with the airport. **Therefore, to the extent possible, we recommend the City of Concord undertake efforts to reduce the probability of the establishment of future residences in close proximity to the airport.**

Future development plans call for the airport to purchase property beyond the approach end of Runway 17 to obtain properties located beneath the runway protection zone (RPZ) for that runway. If purchased, the 1-acre of potential impact to residentially zoned land would be further reduced.

Approximately 11-acres of Institutional District (IS) land will be impacted by the future 65 DNL noise contour. As indicated in the table above, IS zoned land includes both compatible and incompatible land uses. IS land used for government services is compatible with noise levels above 65 DNL. However, IS land used for educational, healthcare, cultural, medical, professional offices and high-density residential uses are incompatible. The New Hampshire Army National Guard currently uses a majority of the 11-acres for government services; however, incompatible land uses adjacent to Airport Road exist. The incompatible IS zoned land located along Airport Road is ideal for future airport development opportunities. **We recommended the City purchase these properties for airport development and to keep them from incompatible development, at the first opportunity.**

4.0 Social Impacts

According to *FAA Order 5050.4A, Airport Environmental Handbook*, "The principal social impacts to be considered are those associated with relocation or other community disruption which may be caused by the proposal [proposed airport development]." The potential for social impacts from the following proposed developments will need to be assessed:

- Extension of Runway 17-35;
- Property acquisition to protect the land located beneath the runway protection zones for Runways 17, 35 and 12; and
- Obstruction removal

The proposed extension will place the 65 DNL noise contour over incompatible residential lands not currently impacted. Such impacts may require noise reduction through sound insulation but may also require the need to relocate residences, businesses or established communities in the long-term future. Likewise, property acquisition of the land located beneath the runway protection zones for Runways 17, 35 and 12 may also require the need to relocate established communities. Obstruction removal will most likely not require the relocation of residences, but may impact established communities if the removal of obstructions such as trees and terrain is required within their population. **Such potential impacts require further social impact analysis, within the framework of an environmental assessment, to determine if significant social impacts exist and whether any mitigation is required.**

5.0 Air Quality

Due to the damaging affects of air pollutants, Congress passed the Clean Air Act in 1970 and updated it in 1990. The Clean Air Act sets National Ambient Air Quality Standards (NAAQS) for specified criteria pollutants such as ozone, carbon monoxide, particulates, sulfur dioxide, nitrogen dioxide, and lead.

Examples of toxic air pollutants include benzene, which is found in gasoline and methylene chloride, which is used as a solvent and paint stripper. Sources of air pollutants include mobile sources such as cars, trucks, buses, and aircraft; stationary sources such as factories, refineries, and power plants; and indoor sources such as building materials and activities such as cleaning.[xiii]

Potential sources of emissions at airports include aircraft, ground support equipment, ground access vehicles, stationary sources, and construction activities.

A general aviation airport project that increases airport capacity must only be assessed for its impact on air quality, according to *FAA Order 5050.4A, Airport Environmental Handbook*, [xiv] if the level of airport activity exceeds 180,000 operations annually. As indicated in *Chapter 2 – Aviation Demand Forecasts*, annual airport activity projected for 2023 is 85,400, well below the threshold. **Therefore, no detailed air quality analysis is needed for Concord Municipal Airport.**

6.0 Water Quality and Wetlands

As indicated in *Section 2.0 – Environmental Conditions* of this chapter, Concord Municipal Airport is located in an area known as the Concord Heights, a plateau, which sits some 60 to 75 feet above the Merrimack and Soucook Rivers and their tributaries. There are no formally delineated wetlands within the boundaries of Concord Municipal Airport. The nearest water body, the Soucook River, serves as the airport's southeasterly boundary for a distance of approximately two miles. The Merrimack River is located west of the airport. The soils underlying Concord Municipal Airport are sandy so other than at the river's edge, there are no wet areas on the airport. All storm water temporarily trapped between runways and taxiways either is captured by catch basins or fairly quickly infiltrates back into the ground.

Storm water leaves Concord Municipal Airport both through closed drainage systems and by overland sheet flow. All of the water is either recharged to the sandy soils of the airport or flows to the Merrimack or Soucook Rivers. The latter joins the Merrimack River south of the airport.

Water quality standards, the control of discharges into surface and subsurface waters, the development of waste treatment management plans and practices, and the issuance of permits for discharges and for dredged or fill material were established under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977. To meet water quality standards the Environmental Protection Agency (EPA) requires owners of industrial facilities such as air transportation facilities to complete a Storm Water Pollution Prevention Plan (SWPPP), file a Notice of Intent (NOI) form and obtain storm water permits.

Storm Water Pollution Prevention Plans assure that run-off from a facility does not carry industrial pollutants into nearby Municipal Separate Storm Sewer Systems (MS4's) or any water bodies of the United States. The operator of the facility evaluates potential pollution sources at the site and selects/implements appropriate measures to prevent or control discharge of pollutants in storm water. A SWPPP is being completed concurrently with this master plan update.

In addition to the SWPPP, the airport is required to obtain permits that outline the proposed airport development and the design, mitigation measures, and construction controls necessary to demonstrate State water quality standards and any Federal, State, and local permit requirements can be met.[xv]

Therefore, completion of a drainage study and the acquisition of appropriate drainage and storm water permits are required for any project implementation at Concord Municipal Airport. As part of this process, *FAA Order 5050.4A, Airport Environmental Handbook*[xv] recommends early consultation between local, State, and Federal agencies charged with implementation of water quality regulations and issuance of permits.

7.0 Historic, Archaeological, Architectural, and Cultural Resources

The National Historic Preservation Act was established in 1966 to advise the President and Congress on historic issues; recommend measures to coordinate Federal historic preservation activities; and to

comment on Federal actions affecting properties included in or eligible for inclusion on the National Register of Historic Places.

The National Register of Historic Places is the United States' official list of cultural resources considered worthy of preservation. It is a part of a national program to bring together public and private efforts to identify, evaluate and protect historic and archaeological resources.

Properties, which are older than 50 years and are historically, architecturally, archaeologically, or culturally significant are eligible to be listed on the National Register.

State Historic Preservation Officers (SHPOs) administer the national historic preservation program at the State level. Therefore, the New Hampshire Division of Historical Resources was contacted to determine if there were any historically, architecturally, archaeologically, or culturally significant properties within the airport's boundaries or in an area of proposed development.

The New Hampshire Division of Historical Resources replied indicating that there are known archaeological resources located within, and in close proximity to, the proposed project area [airport].[xvi] The area is sensitive to Native American sites and historic sites. However, they indicated that additional information on the presence or absence of archaeological resources and standing structures must be collected before the division could make an informed comment on potential impacts. **We recommend that an on-airport archaeological survey, as suggested by the New Hampshire Division of Historical Resources, be conducted prior to implementation of any proposed development.** Their response letter is provided in **Appendix I**.

8.0 Federally and State Listed Endangered Species

The Endangered Species Act was passed by Congress in 1973[1] because of concerns that many flora and fauna species were at risk. According to the U.S. Environmental Protection Agency website, "The Endangered Species Act provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found."[xvii] The United States Department of the Interior – U.S. Fish and Wildlife Service retains a list of all endangered and threatened species.

The New Hampshire Legislature passed the Endangered Species Conservation Act in 1979 to protect, maintain and enhance wildlife species and their habitat normally occurring within the State, which may be in jeopardy of disappearance. The Legislature also passed the Native Plant Protection Act in 1987, which protects indigenous plant species. Several Federal and State agencies are responsible for the implementation of these acts and have policies in place that recognize the importance of natural resource conservation.

According to the United States Fish and Wildlife Service website, there are currently 10 species (seven animal and three plant species), listed under the Federal Endangered Species Act, as Endangered or Threatened within the State of New Hampshire.[xviii]

According to the New Hampshire Fish and Game Department, there are currently 36 species listed as Endangered or Threatened under New Hampshire's Endangered Species Conservation Act[xix] ten of which are also listed under the Federal Endangered Species Act. The two lists differ in that the Federal Endangered Species Act applies to species imperiled throughout the United States, while the New Hampshire Endangered Species Conservation Act applies to species imperiled in the State.

[1] Several amendments have taken place with the latest amendment adopted on November 24, 2003

Letters were sent to The United States Department of the Interior - Fish and Wildlife Service, the New Hampshire Department of Resources and Economic Development – Divisions of Forests and Lands, and the New Hampshire Fish and Game Department to verify the data obtained from the above listed websites and to determine if there were any Federal Endangered or Threatened species located within airport property boundaries. The letters sent to the above agencies are available for review in **Appendix J**.

The United States Department of the Interior - Fish and Wildlife Service replied, stating that, "Except for transient bald eagles (Haliaeetus leucocephalus), the only Federally-listed or proposed, threatened or endangered species under the jurisdiction of the United States Fish and Wildlife Service that is known to occur in the project area is the Karner Blue Butterfly (Lycaeides Melissa samuelis)".[xx] The response letter and report regarding this analysis is provided in **Appendix K**.

The New Hampshire Fish and Game Department replied via office email identifying seven species listed under the Federal Endangered Species Act and New Hampshire's Endangered Species Conservation Act, which have been identified or observed at Concord Municipal Airport (see **Table 4-3**).

Table 4-3: Federal and State Listed Endangered/Threatened Species Found at Concord Municipal Airport

Species	Status	Federal or State Endangered/Threatened	Remarks
Karner Blue Butterfly	Endangered	Federal and State	Present
Frosted Elfin Butterfly	Endangered	State	Present
Persius Duskywing Skipper Butterfly	Endangered	State	Present
Pine Barrens Zanclognatha Moth	Threatened	State	Present
Wild Lupine (*Lupinus perennis*)	Threatened	State	Present
Golden Heather (*Hudsonia ericoides*)	Threatened	State	Present
Blunt Leaved Milkweed	Threatened	State	Possibly present

Sources:
1. United States Department of the Interior - Fish and Wildlife Service[xx]
2. New Hampshire Fish and Game Department[xxi]

The New Hampshire Department of Resources and Economic Development – Divisions of Forests and Lands did not reply to our inquiries but Table 4-3 is regarded as a comprehensive list of species of concern.

We recommend surveys be conducted in the area of proposed development to identify either the presence of or lack of any State or Federal endangered or threatened species prior to development implementation.

9.0 Conservation Management Agreement

As indicated in *Section 2.1 - The Airport's Environmental Setting*, of this chapter, the airport is located in a rare community known as the Concord Pine Barrens, which is essential habitat for a handful of Federally and State Listed Endangered and Threatened species. In an effort to protect this rare community and the species, which thrive here, and to still allow the airport to develop necessary infrastructure, a Conservation Management Agreement between the City of Concord, NHDOT, the

United States Fish and Wildlife Service and the New Hampshire Fish and Game Department was created.

The Conservation Management Agreement was created for the purpose of managing airport lands that provide and enhance essential habitat for several Federally and State Listed Endangered and Threatened species such as the Karner Blue Butterfly and others listed in the table above.

According to the New Hampshire Fish and Game Department, the Karner Blue Butterfly lives and thrives in the Concord Pine Barrens habitat. The Pine Barrens habitat's sandy soil provides the ideal location for the growth of the wild lupine plant, which is the only food that the Karner Blue Caterpillar will eat.

Concord Municipal Airport happens to be one of the last remaining Pine Barren habitat areas in the eastern United States. Wild lupine plants have largely vanished due to the significant reduction in Pine Barren habitat. Thus, so have the number of Karner Blue Butterflies.

Based on this knowledge, the Conservation Management Agreement was executed and identifies areas on the airport that are considered conservation areas, or zones, which are to be protected from future airport development. The agreement also identifies airport development zones on which future airport development can occur.

One of the primary issues identified in the SWPPP is the need for erosion repair at the intersection of Runways 30 and 17. Upon completion, the development area would create additional habitat for the Karner Blue Butterfly, that perhaps could be used as offset to spur agreement by the New Hampshire Fish and Game Department to give up part of the originally agreed upon conservation land area along Airport Road. Adding the narrow strip of conservation land to the narrow strip of developable land will make the area viable for much needed revenue-producing development for the airport.

Chapter 5 – Airport Plans, depicts the location of the conservation and development zones. **This master plan recommends future airport development plans within this airport master plan update that make every effort to abide by the Conservation Management Agreement and the conservation/development zone areas.**

10.0 Environmental Evaluation Summary

In summary, an EA should be completed for all projects proposed within this airport master plan update with subsequent updates to the EA if time lapses or there have been plan changes since the original.

In response to incompatible land uses within the 65 DNL noise contour, the airport should make every effort to restrict the development of residential properties, or other incompatible land use, within the identified areas of potential impact and from those properties located within close proximity to the airport's property boundaries. Property acquisition is also recommended for properties located along Airport Road.

An airport drainage study should be completed for future airport development so that the necessary permits can be obtained to demonstrate that State water quality standards and any Federal, State, and local permit requirements can be met.

Surveys should be conducted prior to implementation of any proposed development project to determine if there are any historic, archaeological, architectural, cultural or State/Federal endangered or threatened species within the project area.

Endnotes

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